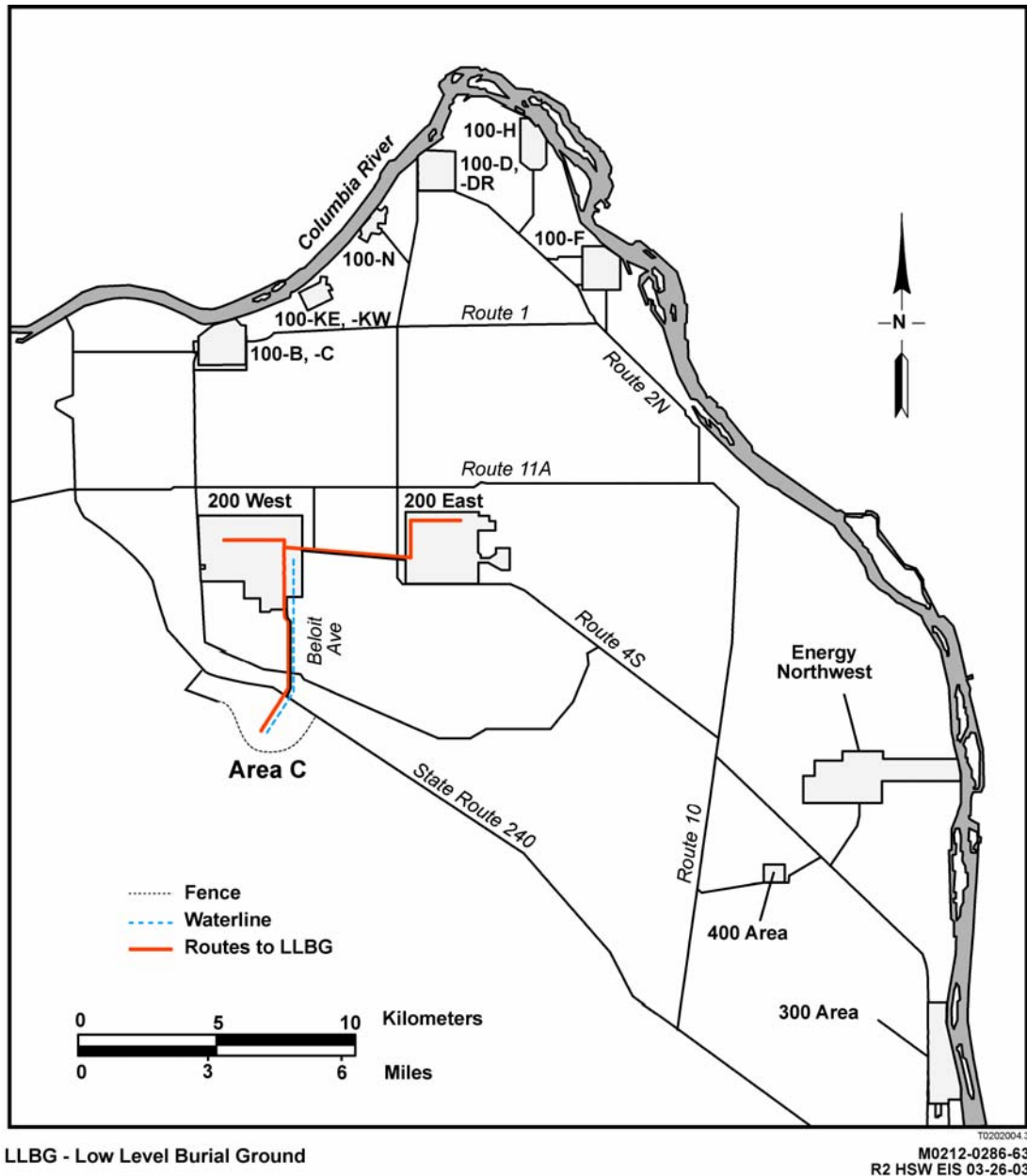
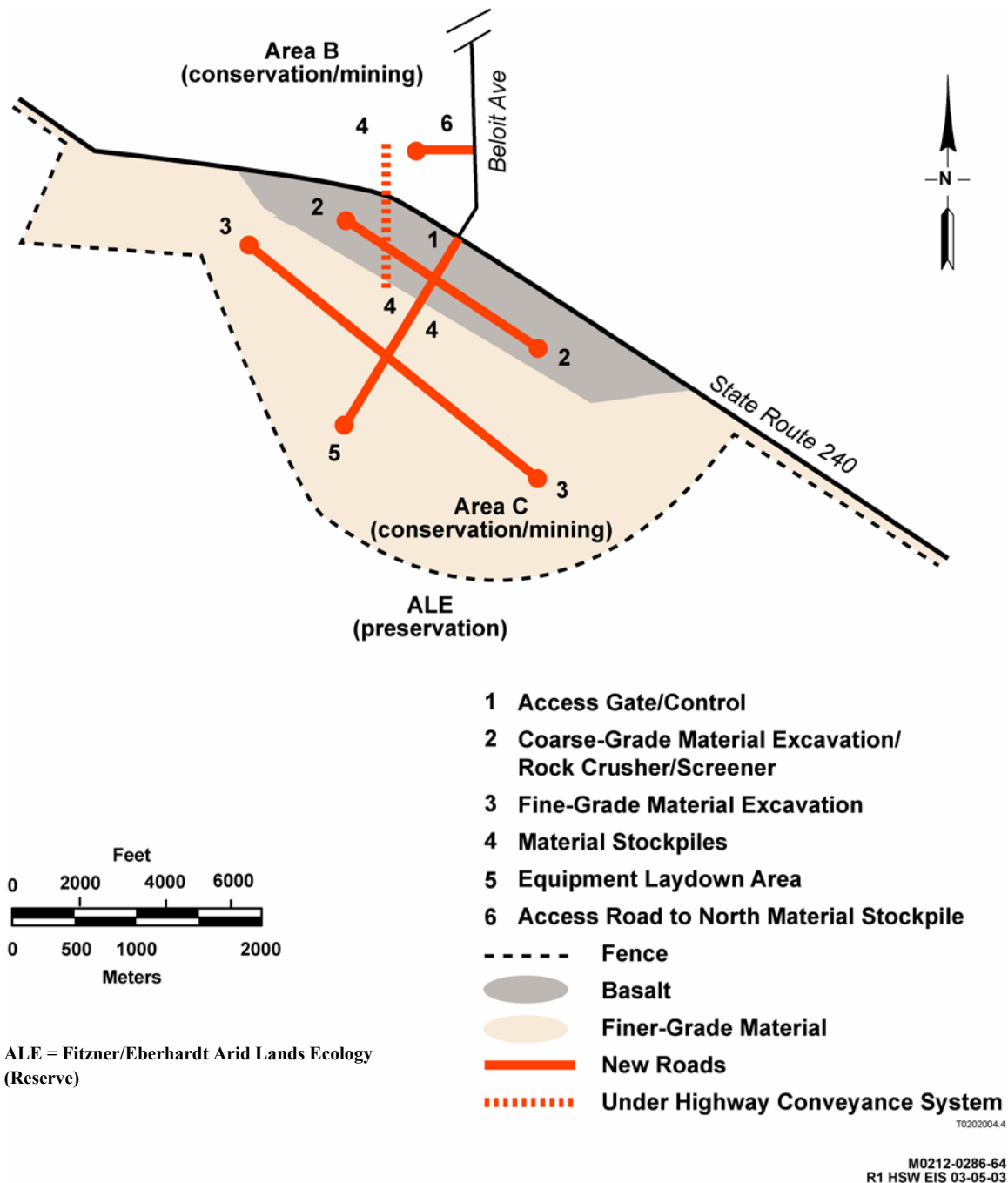


### D.3 Borrow Pit Resource Excavation

Up to approximately 3,700,000 m<sup>3</sup> (approximately 5,000,000 yd<sup>3</sup>) of sand, gravel, rock, and silt/loam will be required as a mineral resource for up to 178 ha (440 ac) of regulatory-compliant caps on LLBGs and other disposal facilities addressed in this EIS. It is anticipated that almost all of the onsite resources required for surface capping will come from Area C, shown in Figures D.10 and D.11. The only exception is materials for an asphalt layer, which would be transported from the Tri-Cities.



**Figure D.10.** Area C Location Relative to the 200 East and 200 West Burial Grounds



**Figure D.11.** Borrow Pit Layout in Area C

Although the amount of resource material varies slightly depending upon the alternative chosen, the variance is not large considering that the areas between LLW and MLLW trenches would be required to be covered to minimize contaminant migration from precipitation events. The barrier edges would be extended far enough beyond the waste trenches to preclude reintrusion of precipitation and snowmelt back into the waste zones.

1 Area C is on the southeast side adjacent to State Route (SR) 240 and is accessed via the Rattlesnake  
2 Gate and Beloit Avenue. Area C is a large 926-ha (2287-ac) polygonal area located adjacent to the south  
3 side of SR 240 and is centered approximately at the intersection of Beloit Avenue and SR 240. The area  
4 is bounded by SR 240 and the Fitzner/Eberhardt Arid Lands Ecology (ALE) Reserve. Area C is not part  
5 of the Hanford Reach National Monument. A small portion of the northern portion of Area C has already  
6 been used as a borrow pit. It is anticipated that less than 7.5 percent (81 ha [200 ac]) of Area C will be  
7 required for capping resource material.

8  
9 Area C is considered part of the Central Plateau in the *Final Hanford Comprehensive Land-Use Plan*  
10 *Environmental Impact Statement* (HCP EIS) and its use is designated as “conservation (mining)”  
11 (DOE 1999). The HCP EIS acknowledges that “mining of onsite geologic materials will be needed to  
12 construct surface barriers as required by Hanford Site remediation activities.”

13  
14 The use of Area C as a borrow pit would have the following restrictions required by the Hanford Site  
15 procedures and best management practices:

- 16  
17 1. A restoration plan would be written to direct how the site would be revegetated and restored.
- 18  
19 2. Topsoil would be stripped and stockpiled for use in revegetation.
- 20  
21 3. Excavation and bank cuts would be kept a minimum of 152 m (500 ft) from SR 240.
- 22  
23 4. Areas prone to wind erosion (for example, active pit faces, haul roads, stockpiles) would be stabilized  
24 as needed with ballast or other means, such as routine wetting with water and a stabilization agent.
- 25  
26 5. Approximately 8 km (5 mi) of new roads within Area C (see Figure D.10) would be built to expedite  
27 traffic and shorten haul roads. It is anticipated that the access road would intersect SR 240 directly  
28 across from the intersection of the highway from Beloit Avenue.
- 29  
30 6. Immediately following the removal of material from each pit, cut banks would be sloped and the sides  
31 of the pits would be shaped with irregular boundaries to avoid straight lines and to more naturally  
32 blend with the surrounding terrain.

33  
34 Borrow operations at Area C would consist of the following:

- 35  
36 • **Infrastructure Upgrade** – Water and electricity would be extended from the vicinity of Beloit  
37 Avenue and 13th Street, a distance of 6.4 km (4 mi). New gravel roads would be installed within  
38 Area C to access the mineral resource, laydown areas, office areas, and resource stockpiles. Modular  
39 space would be used for offices, lunchrooms, and showers. A holding tank would be installed to  
40 receive sanitary wastewater from trailers. Portable toilets would be provided to all other areas of the  
41 site. A contract sanitary waste hauler would service the holding tank and portable toilets at least  
42 twice weekly. Site lighting would be provided via fixed lights on poles and portable, rechargeable  
43 light stands.
- 44

- 1 • **Resource Excavation** – Borrow pits would be excavated via a track hoe, scraper, bulldozer, and/or  
2 front-end loader and loaded either directly into trucks or onto conveyor systems. Conveyor systems  
3 would be used to move the resource to stockpile areas or to load trucks. Conveyor systems would be  
4 fitted with crushing, sorting, and screening systems to segregate fines from rock. Basalt would  
5 probably be blasted with standard controlled subsurface detonations. A one-shift operation with  
6 approximately 20 trucks would require a minimum of 12 years of borrow pit operation.  
7
- 8 • **Under Highway Conveyance System** – Part of the conveyor system discussed above would be a  
9 more permanent system installed between the access gate and road in Area C and another  
10 conservation/mining area north of SR 240 (Area B, shown in Figure D.10). Area B is also an area  
11 designated as “conservation (mining)” by the HCP EIS and would be used only as a reservoir for  
12 resource material excavated from Area C to minimize the number of truck highway crossings that  
13 could be expected during peak capping demand periods; as such, it is only expected to be in use  
14 during the latter portion of the LLBG capping mission. The same crew that performed the water and  
15 power infrastructure upgrade would be used to install a new approximately 1-m- (36-in-) diameter  
16 approximately 24-m- (80-ft-) long culvert under SR 240 (see Figure D.10), using standard horizontal  
17 boring techniques used frequently in municipal applications. A screw auger type conveyance system  
18 would then be slipped through the culvert to convey resource material from Area C to Area B.  
19
- 20 • **Resource Restoration** – Immediately after the mineral resource from a pit is depleted, restoration  
21 activities would proceed, including laying backside slopes and eliminating straight lines to match the  
22 surrounding environment. Stockpiled topsoil would then be redistributed into the borrow pit and the  
23 area replanted with native vegetation. If necessary, water would be sprinkled onto the site to promote  
24 seed germination. It is estimated this activity would add an additional 5 percent to the cost and labor  
25 of the borrow pit operation.  
26
- 27 • **Hauling and Stockpiling** – A fleet of haul trucks would be used to haul resource material to stock-  
28 piles (if not directly conveyed) or the LLBGs in both 200 East and 200 West Areas. The numbers of  
29 haul trucks would be similar to those associated with hauling contaminated material to the Environ-  
30 mental Restoration and Disposal Facility. Haul trucks would be loaded either directly from borrow  
31 pit excavations or from stockpiles. Stockpiles would be staged 152 to 305 m (500 to 1,000 ft) from  
32 SR 240 in topographically low areas to minimize wind erosion.  
33
- 34 • **Dust and Traffic Control** – Traffic and dust control required by Area C operations are important  
35 considerations because of the vicinity of SR 240 and potential safety hazards associated with traffic.  
36 The following precautions are planned as needed:  
37
  - 38 - Haul trucks would be fitted with roll-out tarps. If necessary, an undercarriage and wheel wash-  
39 down system would be provided near the point where the trucks cross SR 240 to minimize  
40 fugitive dusts.
  - 41 - If necessary, a traffic light could also be installed at the intersection, with warning lights on each  
42 side of it to warn oncoming traffic.  
43